



## SEQUENCE LISTING

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<120> CYSTINE KNOT GROWTH FACTOR MUTANTS

<130> UOFMD.003C1

<150> PCT/US99/05908

<151> 1999-03-19

<150> PCT/US98/19772

<151> 1998-09-22

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<170> FastSEQ for Windows Version 4.0

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<211> 93

<212> PRT

<213> HOMO. SAPIEN

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Pro	Phe	Phe	Ser	Gln	Pro	Gly	Ala	Pro	Ile	Leu	Gln	Cys	Met	Gly	Cys
			20					25					30		
Cys	Phe	Ser	Arg	Ala	Tyr	Pro	Thr	Pro	Leu	Arg	Ser	Lys	Lys	Thr	Met
		35					40					45			
Leu	Val	Gln	Lys	Asn	Val	Thr	Ser	Glu	Ser	Thr	Cys	Cys	Val	Ala	Lys
	50					55					60				
Ser	Tyr	Asn	Arg	Val	Thr	Val	Met	Gly	Gly	Phe	Lys	Val	Glu	Asn	His
65					70					75				80	
Thr	Ala	Cys	His	Cys	Ser	Thr	Cys	Tyr	Tyr	His	Lys	Ser			
				85					90						

<210> 2

<211> 119

<212> PRT

<213> HOMO SAPIEN

<400> 2

Pro	Phe	Cys	Ile	Pro	Thr	Glu	Tyr	Thr	Met	His	Ile	Glu	Arg	Arg	Glu
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Cys	Ala	Tyr	Cys	Leu	Thr	Ile	Asn	Thr	Thr	Ile	Cys	Ala	Gly	Tyr	Cys
			20					25					30		
Met	Thr	Arg	Asp	Ile	Asn	Gly	Lys	Leu	Phe	Leu	Pro	Lys	Tyr	Ala	Leu
		35					40					45			
Ser	Gln	Asp	Val	Cys	Thr	Tyr	Arg	Asp	Phe	Ile	Tyr	Arg	Thr	Val	Glu
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Ile	Pro	Gly	Cys	Pro	Leu	His	Val	Ala	Pro	Tyr	Phe	Ser	Tyr	Pro	Val



<210> 5  
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 <213> HOMO SAPIEN

<400> 5  
 Pro Asn Ser Cys Glu Leu Thr Asn Ile Thr Ile Ala Ile Glu Lys Glu  
 1 5 10 15  
 Glu Cys Arg Phe Cys Ile Ser Ile Asn Thr Thr Trp Cys Ala Gly Tyr  
 20 25 30  
 Cys Tyr Thr Arg Asp Leu Val Tyr Lys Asp Pro Ala Arg Pro Lys Ile  
 35 40 45  
 Thr Cys Thr Phe Lys Glu Leu Val Tyr Glu Thr Val Arg Val Pro Gly  
 50 55 60  
 Cys Ala His His Ala Asp Ser Leu Tyr Thr Tyr Pro Val Ala Thr Gln  
 65 70 75 80  
 Cys His Cys Gly Lys Cys Asp Ser Asp Ser Thr Asp Cys Thr Val Arg  
 85 90 95  
 Gly Leu Gly Pro Ser Tyr Cys Ser Phe Gly Glu Met Lys Glu  
 100 105 110

<210> 6  
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 <213> HOMO SAPIEN

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 Pro Ser Ile Glu Glu Ala Val Pro Ala Val Cys Lys Thr Arg Thr Val  
 1 5 10 15  
 Ile Tyr Glu Ile Pro Arg Ser Gln Val Asp Pro Thr Ser Ala Asn Phe  
 20 25 30  
 Leu Ile Trp Pro Pro Cys Val Glu Val Lys Arg Cys Thr Gly Cys Cys  
 35 40 45  
 Asn Thr Ser Ser Val Lys Cys Gln Pro Ser Arg Val His His Arg Ser  
 50 55 60  
 Val Lys Val Ala Lys Val Glu Tyr Val Arg Lys Lys Pro Lys Leu Lys  
 65 70 75 80  
 Glu Val Gln Val Arg Leu Glu Glu His Leu Glu Cys Ala Cys Ala Thr  
 85 90 95  
 Thr Ser Leu Asn Pro Asp Tyr Arg Glu Glu Asp Thr Gly Arg Pro Arg  
 100 105 110  
 Glu Ser Gly Lys Lys Arg Lys Arg Lys Arg Leu Lys Pro Thr  
 115 120 125

<210> 7  
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 <213> HOMO SAPIEN

<400> 7  
 Pro Ser Leu Gly Ser Leu Thr Ile Ala Glu Pro Ala Met Ile Ala Glu  
 1 5 10 15  
 Cys Lys Thr Arg Thr Glu Val Phe Glu Ile Ser Arg Arg Leu Ile Asp



<400> 9

Pro	Ser	Ser	Ser	His	Pro	Ile	Phe	His	Arg	Gly	Glu	Phe	Ser	Val	Cys
1				5					10					15	
Asp	Ser	Val	Ser	Val	Trp	Val	Gly	Asp	Lys	Thr	Thr	Ala	Thr	Asp	Ile
		20						25					30		
Lys	Gly	Lys	Glu	Val	Met	Val	Leu	Gly	Glu	Val	Asn	Asn	Ile	Asn	Ser
		35					40					45			
Val	Phe	Lys	Gln	Tyr	Phe	Phe	Glu	Thr	Lys	Cys	Arg	Asp	Pro	Asn	Pro
	50					55					60				
Val	Asp	Ser	Gly	Cys	Arg	Gly	Ile	Asp	Ser	Lys	His	Trp	Asn	Ser	Tyr
65					70					75					80
Cys	Thr	Thr	Thr	His	Thr	Phe	Val	Lys	Ala	Met	Leu	Thr	Asp	Gly	Lys
				85					90					95	
Gln	Ala	Ala	Trp	Arg	Phe	Ile	Arg	Ile	Asp	Thr	Ala	Cys	Val	Cys	Val
			100					105					110		
Leu	Ser	Arg	Lys	Ala	Val	Arg	Arg	Ala							
		115					120								

<210> 10

<211> 120

<212> PRT

<213> HOMO SAPIEN

<400> 10

Pro	His	Ser	Asp	Pro	Ala	Arg	Arg	Gly	Glu	Leu	Ser	Val	Cys	Asp	Ser
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Ile	Ser	Glu	Trp	Val	Thr	Ala	Ala	Asp	Lys	Lys	Thr	Ala	Val	Asp	Met
			20					25					30		
Ser	Gly	Gly	Thr	Val	Thr	Val	Leu	Glu	Lys	Val	Ser	Pro	Val	Lys	Gly
		35					40					45			
Gln	Leu	Lys	Gln	Tyr	Phe	Tyr	Glu	Thr	Lys	Cys	Asn	Pro	Met	Gly	Tyr
	50					55					60				
Thr	Lys	Glu	Gly	Cys	Arg	Gly	Ile	Asp	Lys	Arg	His	Trp	Asn	Ser	Gln
65					70					75					80
Cys	Arg	Thr	Thr	Gln	Ser	Tyr	Val	Arg	Ala	Met	Leu	Thr	Asp	Ser	Lys
				85					90					95	
Lys	Arg	Ile	Gly	Trp	Arg	Phe	Ile	Arg	Ile	Asp	Thr	Ser	Cys	Val	Cys
			100					105					110		
Ile	Leu	Thr	Ile	Lys	Arg	Gly	Arg								
		115					120								

<210> 11

<211> 120

<212> PRT

<213> HOMO SAPIEN

<400> 11

Pro	Tyr	Ala	Glu	His	Lys	Ser	His	Arg	Gly	Glu	Tyr	Ser	Val	Cys	Asp
1				5					10					15	
Ser	Glu	Ser	Leu	Trp	Val	Thr	Asp	Lys	Ser	Ser	Ala	Ile	Asp	Ile	Arg
			20					25					30		
Gly	His	Gln	Val	Thr	Val	Leu	Gly	Glu	Ile	Gly	Lys	Thr	Asn	Ser	Pro
		35					40					45			
Val	Lys	Gln	Tyr	Phe	Tyr	Glu	Thr	Arg	Cys	Lys	Glu	Ala	Arg	Pro	Val

50		55		60
Lys Asn Gly Cys Arg Gly Ile Asp Asp Arg His Trp Asn Ser Gln Cys				
65		70		75
Lys Thr Ser Gln Thr Tyr Val Arg Ala Ser Leu Thr Glu Asn Asn Lys				80
		85		90
Leu Val Gly Trp Arg Trp Ile Arg Ile Asp Thr Ser Cys Val Cys Ala				95
		100		105
Leu Ser Arg Lys Ile Gly Arg Thr				110
		115		120

<210> 12  
 <211> 131  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 12

Pro Gly Val Ser Glu Thr Ala Pro Ala Ser Arg Arg Gly Glu Leu Ala				
1		5		10
Val Cys Asp Ala Val Ser Gly Trp Val Thr Asp Arg Arg Thr Ala Val				15
		20		25
Asp Leu Arg Gly Arg Glu Val Glu Val Leu Gly Glu Val Pro Ala Ala				30
		35		40
Gly Gly Ser Pro Leu Arg Gln Tyr Phe Phe Glu Thr Arg Cys Lys Ala				45
		50		55
Asp Asn Ala Glu Glu Gly Gly Pro Gly Ala Gly Gly Gly Cys Arg				60
65		70		75
Gly Val Asp Arg Arg His Trp Val Ser Glu Cys Lys Ala Lys Gln Ser				80
		85		90
Tyr Val Arg Ala Leu Thr Ala Asp Ala Gln Gly Arg Val Gly Trp Arg				95
		100		105
Trp Ile Arg Ile Asp Thr Ala Cys Val Cys Thr Leu Leu Ser Arg Thr				110
		115		120
Gly Arg Ala				125
		130		

<210> 13  
 <211> 113  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 13

Pro Ala Leu Asp Thr Asn Tyr Cys Phe Ser Ser Thr Glu Lys Asn Cys				
1		5		10
Cys Val Arg Gln Leu Tyr Ile Asp Phe Arg Lys Asp Leu Gly Trp Lys				15
		20		25
Trp Ile His Glu Pro Lys Gly Tyr His Ala Asn Phe Cys Leu Gly Pro				30
		35		40
Cys Pro Tyr Ile Trp Ser Leu Asp Thr Gln Tyr Ser Lys Val Leu Ala				45
		50		55
Leu Tyr Asn Gln His Asn Pro Gly Ala Ser Ala Ala Pro Cys Cys Val				60
65		70		75
Pro Gln Ala Leu Glu Pro Leu Pro Ile Val Tyr Tyr Val Gly Arg Lys				80
		85		90
Pro Lys Val Glu Gln Leu Ser Asn Met Ile Val Arg Ser Cys Lys Cys				95
		100		105
				110

Ser

<210> 14  
<211> 113  
<212> PRT  
<213> HOMO SAPIEN

<400> 14  
Pro Ala Leu Asp Ala Ala Tyr Cys Phe Arg Asn Val Gln Asp Asn Cys  
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Cys Leu Arg Pro Leu Tyr Ile Asp Phe Lys Arg Asp Leu Gly Trp Lys  
20 25 30  
Trp Ile His Glu Pro Lys Gly Tyr Asn Ala Asn Phe Cys Ala Gly Ala  
35 40 45  
Cys Pro Tyr Leu Trp Ser Ser Asp Thr Gln His Ser Arg Val Leu Ser  
50 55 60  
Leu Tyr Asn Thr Ile Asn Pro Glu Ala Ser Ala Ser Pro Cys Cys Val  
65 70 75 80  
Ser Gln Asp Leu Glu Pro Leu Thr Ile Leu Tyr Tyr Ile Gly Lys Thr  
85 90 95  
Pro Lys Ile Glu Gln Leu Ser Asn Met Ile Val Lys Ser Cys Lys Cys  
100 105 110  
Ser

<210> 15  
<211> 113  
<212> PRT  
<213> HOMO SAPIEN

<400> 15  
Pro Ala Leu Asp Thr Asn Tyr Cys Phe Arg Asn Leu Glu Glu Asn Cys  
1 5 10 15  
Cys Val Arg Pro Leu Tyr Ile Asp Phe Arg Gln Asp Leu Gly Trp Lys  
20 25 30  
Trp Val His Glu Pro Lys Gly Tyr Tyr Ala Asn Phe Cys Ser Gly Pro  
35 40 45  
Cys Pro Tyr Leu Arg Ser Ala Asp Thr Thr His Ser Thr Val Leu Gly  
50 55 60  
Leu Tyr Asn Thr Leu Asn Pro Glu Ala Ser Ala Ser Pro Cys Cys Val  
65 70 75 80  
Pro Gln Asp Leu Glu Pro Leu Thr Ile Leu Tyr Tyr Val Gly Arg Thr  
85 90 95  
Pro Lys Val Glu Gln Leu Ser Asn Met Val Val Lys Ser Cys Lys Cys  
100 105 110  
Ser

<210> 16  
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<213> HOMO SAPIEN

<400> 16

Pro	Met	Trp	Pro	Leu	Trp	Leu	Cys	Trp	Ala	Leu	Trp	Val	Leu	Pro	Leu	
1				5					10					15		
Ala	Gly	Pro	Gly	Ala	Ala	Leu	Thr	Glu	Glu	Gln	Leu	Leu	Ala	Ser	Leu	
			20					25					30			
Leu	Arg	Gln	Leu	Gln	Leu	Ser	Glu	Val	Pro	Val	Leu	Asp	Arg	Ala	Asp	
		35					40					45				
Met	Glu	Lys	Leu	Val	Ile	Pro	Ala	His	Val	Arg	Ala	Gln	Tyr	Val	Val	
	50					55					60					
Leu	Leu	Arg	Arg	Asp	Gly	Asp	Arg	Ser	Arg	Gly	Lys	Arg	Phe	Ser	Gln	
65					70					75					80	
Ser	Phe	Arg	Glu	Val	Ala	Gly	Arg	Phe	Leu	Ala	Ser	Glu	Ala	Ser	Thr	
			85						90					95		
His	Leu	Leu	Val	Phe	Gly	Met	Glu	Gln	Arg	Leu	Pro	Pro	Asn	Ser	Glu	
			100					105					110			
Leu	Val	Gln	Ala	Val	Leu	Arg	Leu	Phe	Gln	Glu	Pro	Val	Pro	Gln	Gly	
		115					120					125				
Ala	Leu	His	Arg	His	Gly	Arg	Leu	Ser	Pro	Ala	Ala	Pro	Lys	Ala	Arg	
	130				135						140					
Val	Thr	Val	Glu	Trp	Leu	Val	Arg	Asp	Asp	Gly	Ser	Asn	Arg	Thr	Ser	
145					150					155					160	
Leu	Ile	Asp	Ser	Arg	Leu	Val	Ser	Val	His	Glu	Ser	Gly	Trp	Lys	Ala	
			165						170					175		
Phe	Asp	Val	Thr	Glu	Ala	Val	Asn	Phe	Trp	Gln	Gln	Leu	Ser	Arg	Pro	
		180						185					190			
Pro	Glu	Pro	Leu	Leu	Val	Gln	Val	Ser	Val	Gln	Arg	Glu	His	Leu	Gly	
		195				200						205				
Pro	Leu	Ala	Ser	Gly	Ala	His	Lys	Leu	Val	Arg	Phe	Ala	Ser	Gln	Gly	
	210				215						220					
Ala	Pro	Ala	Gly	Leu	Gly	Glu	Pro	Gln	Leu	Glu	Leu	His	Thr	Leu	Asp	
225					230					235					240	
Leu	Arg	Asp	Tyr	Gly	Ala	Gln	Gly	Asp	Cys	Asp	Pro	Glu	Ala	Pro	Met	
			245						250					255		
Thr	Glu	Gly	Thr	Arg	Cys	Cys	Arg	Gln	Glu	Met	Tyr	Ile	Asp	Leu	Gln	
			260					265					270			
Gly	Met	Lys	Trp	Ala	Lys	Asn	Trp	Val	Leu	Glu	Pro	Pro	Gly	Phe	Leu	
		275					280					285				
Ala	Tyr	Glu	Cys	Val	Gly	Thr	Cys	Gln	Gln	Pro	Pro	Glu	Ala	Leu	Ala	
	290					295					300					
Phe	Asn	Trp	Pro	Phe	Leu	Gly	Pro	Arg	Gln	Cys	Ile	Ala	Ser	Glu	Thr	
305					310					315					320	
Ala	Ser	Leu	Pro	Met	Ile	Val	Ser	Ile	Lys	Glu	Gly	Gly	Arg	Thr	Arg	
			325						330					335		
Pro	Gln	Val	Val	Ser	Leu	Pro	Asn	Met	Arg	Val	Gln	Lys	Cys	Ser	Cys	
		340						345					350			
Ala	Ser	Asp	Gly	Ala	Leu	Val	Pro	Arg	Arg	Leu	Gln	His	Arg	Pro	Trp	
		355					360					365				
Cys	Ile	His														
	370															

<210> 17

<211> 198

<212> PRT

<213> HOMO SAPIEN

<400> 17



Pro	Met	Gln	Arg	Trp	Lys	Ala	Ala	Ala	Leu	Ala	Ser	Val	Leu	Cys	Ser	1	5	10	15
Ser	Val	Leu	Ser	Ile	Trp	Met	Cys	Arg	Glu	Gly	Leu	Leu	Leu	Ser	His	20	25	30	
Arg	Leu	Gly	Pro	Ala	Leu	Val	Pro	Leu	His	Arg	Leu	Pro	Arg	Thr	Leu	35	40	45	
Asp	Ala	Arg	Ile	Ala	Arg	Leu	Ala	Gln	Tyr	Arg	Ala	Leu	Leu	Gln	Gly	50	55	60	
Ala	Pro	Asp	Ala	Met	Glu	Leu	Arg	Glu	Leu	Thr	Pro	Trp	Ala	Gly	Arg	65	70	75	80
Pro	Pro	Gly	Pro	Arg	Arg	Arg	Ala	Gly	Pro	Arg	Arg	Arg	Arg	Ala	Arg	85	90	95	
Ala	Arg	Leu	Gly	Ala	Arg	Pro	Cys	Gly	Leu	Arg	Glu	Leu	Glu	Val	Arg	100	105	110	
Val	Ser	Glu	Leu	Gly	Leu	Gly	Tyr	Ala	Ser	Asp	Glu	Thr	Val	Leu	Phe	115	120	125	
Arg	Tyr	Cys	Ala	Gly	Ala	Cys	Glu	Ala	Ala	Ala	Arg	Val	Tyr	Asp	Leu	130	135	140	
Gly	Leu	Arg	Arg	Leu	Arg	Gln	Arg	Arg	Arg	Leu	Arg	Arg	Glu	Arg	Val	145	150	155	160
Arg	Ala	Gln	Pro	Cys	Cys	Arg	Pro	Thr	Ala	Tyr	Glu	Asp	Glu	Val	Ser	165	170	175	
Phe	Leu	Asp	Ala	His	Ser	Arg	Tyr	His	Thr	Val	His	Glu	Leu	Ser	Ala	180	185	190	
Arg	Glu	Cys	Ala	Cys	Val											195			

<210> 18  
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 <212> PRT  
 <213> HOMO SAPIEN

Pro	Met	Val	Leu	His	Leu	Leu	Leu	Phe	Leu	Leu	Leu	Thr	Pro	Gln	Gly	1	5	10	15
Gly	His	Ser	Cys	Gln	Gly	Leu	Glu	Leu	Ala	Arg	Glu	Leu	Val	Leu	Ala	20	25	30	
Lys	Val	Arg	Ala	Leu	Phe	Leu	Asp	Ala	Leu	Gly	Pro	Pro	Ala	Val	Thr	35	40	45	
Arg	Glu	Gly	Gly	Asp	Pro	Gly	Val	Arg	Arg	Leu	Pro	Arg	Arg	His	Ala	50	55	60	
Leu	Gly	Gly	Phe	Thr	His	Arg	Gly	Ser	Glu	Pro	Glu	Glu	Glu	Glu	Asp	65	70	75	80
Val	Ser	Gln	Ala	Ile	Leu	Phe	Pro	Ala	Thr	Asp	Ala	Ser	Cys	Glu	Asp	85	90	95	
Lys	Ser	Ala	Ala	Arg	Gly	Leu	Ala	Gln	Glu	Ala	Glu	Glu	Gly	Leu	Phe	100	105	110	
Arg	Tyr	Met	Phe	Arg	Pro	Ser	Gln	His	Thr	Arg	Ser	Arg	Gln	Val	Thr	115	120	125	
Ser	Ala	Gln	Leu	Trp	Phe	His	Thr	Gly	Leu	Asp	Arg	Gln	Gly	Thr	Ala	130	135	140	
Ala	Ser	Asn	Ser	Ser	Glu	Pro	Leu	Leu	Gly	Leu	Leu	Ala	Leu	Ser	Pro	145	150	155	160
Gly	Gly	Pro	Val	Ala	Val	Pro	Met	Ser	Leu	Gly	His	Ala	Pro	Pro	His	165	170	175	
Trp	Ala	Val	Leu	His	Leu	Ala	Thr	Ser	Ala	Leu	Ser	Leu	Leu	Thr	His				





				165					170					175			
Ala	Ser	Leu	Trp	Leu	Tyr	Leu	Lys	Leu	Leu	Pro	Tyr	Val	Leu	Glu	Lys		
			180					185					190				
Gly	Ser	Arg	Arg	Lys	Val	Arg	Val	Lys	Val	Tyr	Phe	Gln	Glu	Gln	Gly		
		195					200					205					
His	Gly	Asp	Arg	Trp	Asn	Met	Val	Glu	Lys	Arg	Val	Asp	Leu	Lys	Arg		
	210				215					220							
Ser	Gly	Trp	His	Thr	Phe	Pro	Leu	Thr	Glu	Ala	Ile	Gln	Ala	Leu	Phe		
225					230					235					240		
Glu	Arg	Gly	Glu	Arg	Arg	Leu	Asn	Leu	Asp	Val	Gln	Cys	Asp	Ser	Cys		
				245					250					255			
Gln	Glu	Leu	Ala	Val	Val	Pro	Val	Phe	Val	Asp	Pro	Gly	Glu	Glu	Ser		
			260					265					270				
His	Arg	Pro	Phe	Val	Val	Val	Gln	Ala	Arg	Leu	Gly	Asp	Ser	Arg	His		
	275						280					285					
Arg	Ile	Arg	Lys	Arg	Gly	Leu	Glu	Cys	Asp	Gly	Arg	Thr	Asn	Leu	Cys		
	290				295					300							
Cys	Arg	Gln	Gln	Phe	Phe	Ile	Asp	Phe	Arg	Leu	Ile	Gly	Trp	Asn	Asp		
305					310					315					320		
Trp	Ile	Ile	Ala	Pro	Thr	Gly	Tyr	Tyr	Gly	Asn	Tyr	Cys	Glu	Gly	Ser		
				325					330					335			
Cys	Pro	Ala	Tyr	Leu	Ala	Gly	Val	Pro	Gly	Ser	Ala	Ser	Ser	Phe	His		
		340						345					350				
Thr	Ala	Val	Val	Asn	Gln	Tyr	Arg	Met	Arg	Gly	Leu	Asn	Pro	Gly	Thr		
	355					360						365					
Val	Asn	Ser	Cys	Cys	Ile	Pro	Thr	Lys	Leu	Ser	Thr	Met	Ser	Met	Leu		
	370					375					380						
Tyr	Phe	Asp	Asp	Glu	Tyr	Asn	Ile	Val	Lys	Arg	Asp	Val	Pro	Asn	Met		
385					390					395					400		
Ile	Val	Glu	Glu	Cys	Gly	Cys	Ala										
				405													

<210> 21  
 <211> 427  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 21

Pro	Met	Pro	Leu	Leu	Trp	Leu	Arg	Gly	Phe	Leu	Leu	Ala	Ser	Cys	Trp		
1			5					10						15			
Ile	Ile	Val	Arg	Ser	Ser	Pro	Thr	Pro	Gly	Ser	Glu	Gly	His	Ser	Ala		
			20					25					30				
Ala	Pro	Asp	Cys	Pro	Ser	Cys	Ala	Leu	Ala	Ala	Leu	Pro	Lys	Asp	Val		
		35					40					45					
Pro	Asn	Ser	Gln	Pro	Glu	Met	Val	Glu	Ala	Val	Lys	Lys	His	Ile	Leu		
	50					55					60						
Asn	Met	Leu	His	Leu	Lys	Lys	Arg	Pro	Asp	Val	Thr	Gln	Pro	Val	Pro		
65					70					75					80		
Lys	Ala	Ala	Leu	Leu	Asn	Ala	Ile	Arg	Lys	Leu	His	Val	Gly	Lys	Val		
			85						90					95			
Gly	Glu	Asn	Gly	Tyr	Val	Glu	Ile	Glu	Asp	Asp	Ile	Gly	Arg	Arg	Ala		
		100						105				110					
Glu	Met	Asn	Glu	Leu	Met	Glu	Gln	Thr	Ser	Glu	Ile	Ile	Thr	Phe	Ala		
		115					120					125					
Glu	Ser	Gly	Thr	Ala	Arg	Lys	Thr	Leu	His	Phe	Glu	Ile	Ser	Lys	Glu		
	130					135					140						

Gly	Ser	Asp	Leu	Ser	Val	Val	Glu	Arg	Ala	Glu	Val	Trp	Leu	Phe	Leu	
145				150						155					160	
Lys	Val	Pro	Lys	Ala	Asn	Arg	Thr	Arg	Thr	Lys	Val	Thr	Ile	Arg	Leu	
				165					170					175		
Phe	Gln	Gln	Gln	Lys	His	Pro	Gln	Gly	Ser	Leu	Asp	Thr	Gly	Glu	Glu	
			180					185					190			
Ala	Glu	Glu	Val	Gly	Leu	Lys	Gly	Glu	Arg	Ser	Glu	Leu	Leu	Leu	Ser	
		195					200					205				
Glu	Lys	Val	Val	Asp	Ala	Arg	Lys	Ser	Thr	Trp	His	Val	Phe	Pro	Val	
	210					215					220					
Ser	Ser	Ser	Ile	Gln	Arg	Leu	Leu	Asp	Gln	Gly	Lys	Ser	Ser	Leu	Asp	
225					230					235					240	
Val	Arg	Ile	Ala	Cys	Glu	Gln	Cys	Gln	Glu	Ser	Gly	Ala	Ser	Leu	Val	
				245					250					255		
Leu	Leu	Gly	Lys	Lys	Lys	Lys	Lys	Glu	Glu	Gly	Glu	Gly	Lys	Lys		
			260					265					270			
Lys	Gly	Gly	Gly	Glu	Gly	Gly	Ala	Gly	Ala	Asp	Glu	Glu	Lys	Glu	Gln	
		275					280					285				
Ser	His	Arg	Pro	Phe	Leu	Met	Leu	Gln	Ala	Arg	Gln	Ser	Glu	Asp	His	
	290					295					300					
Pro	His	Arg	Arg	Arg	Arg	Arg	Gly	Leu	Glu	Cys	Asp	Gly	Lys	Val	Asn	
305					310					315					320	
Ile	Cys	Cys	Lys	Lys	Gln	Phe	Phe	Val	Ser	Phe	Lys	Asp	Ile	Gly	Trp	
				325					330					335		
Asn	Asp	Trp	Ile	Ala	Pro	Ser	Gly	Tyr	His	Ala	Asn	Tyr	Cys	Glu		
			340				345					350				
Gly	Glu	Cys	Pro	Ser	His	Ile	Ala	Gly	Thr	Ser	Gly	Ser	Ser	Leu	Ser	
		355					360					365				
Phe	His	Ser	Thr	Val	Ile	Asn	His	Tyr	Arg	Met	Arg	Gly	His	Ser	Pro	
	370					375					380					
Phe	Ala	Asn	Leu	Lys	Ser	Cys	Cys	Val	Pro	Thr	Lys	Leu	Arg	Pro	Met	
385					390					395					400	
Ser	Met	Leu	Tyr	Tyr	Asp	Asp	Gly	Gln	Asn	Ile	Ile	Lys	Lys	Asp	Ile	
				405				410						415		
Gln	Asn	Met	Ile	Val	Glu	Glu	Cys	Gly	Cys	Ser						
		420						425								

<210> 22  
 <211> 408  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 22

Pro	Met	Asp	Gly	Leu	Pro	Gly	Arg	Ala	Leu	Gly	Ala	Ala	Cys	Leu	Leu	
1				5					10					15		
Leu	Leu	Ala	Ala	Gly	Trp	Leu	Gly	Pro	Glu	Ala	Trp	Gly	Ser	Pro	Thr	
			20					25					30			
Pro	Pro	Pro	Thr	Pro	Ala	Ala	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Gly	Ser	
		35					40						45			
Pro	Gly	Gly	Ser	Gln	Asp	Thr	Cys	Thr	Ser	Cys	Gly	Gly	Phe	Arg	Arg	
	50					55					60					
Pro	Glu	Glu	Leu	Gly	Arg	Val	Asp	Gly	Asp	Phe	Leu	Glu	Ala	Val	Lys	
65					70				75						80	
Arg	His	Ile	Leu	Ser	Arg	Leu	Gln	Met	Arg	Gly	Arg	Pro	Asn	Ile	Thr	
				85					90					95		
His	Ala	Val	Pro	Lys	Ala	Ala	Met	Val	Thr	Ala	Leu	Arg	Lys	Leu	His	

			100					105					110				
Ala	Gly	Lys	Val	Arg	Glu	Asp	Gly	Arg	Val	Glu	Ile	Pro	His	Leu	Asp		
		115					120					125					
Gly	His	Ala	Ser	Pro	Gly	Ala	Asp	Gly	Gln	Glu	Arg	Val	Ser	Glu	Ile		
	130					135					140						
Ile	Ser	Phe	Ala	Glu	Thr	Asp	Gly	Leu	Ala	Ser	Ser	Arg	Val	Arg	Leu		
145					150					155					160		
Tyr	Phe	Phe	Ile	Ser	Asn	Glu	Gly	Asn	Gln	Asn	Leu	Phe	Val	Val	Gln		
			165					170						175			
Ala	Ser	Leu	Trp	Leu	Tyr	Leu	Lys	Leu	Leu	Pro	Tyr	Val	Leu	Glu	Lys		
		180						185					190				
Gly	Ser	Arg	Arg	Lys	Val	Arg	Val	Lys	Val	Tyr	Phe	Gln	Glu	Gln	Gly		
	195						200					205					
His	Gly	Asp	Arg	Trp	Asn	Met	Val	Glu	Lys	Arg	Val	Asp	Leu	Lys	Arg		
	210				215					220							
Ser	Gly	Trp	His	Thr	Phe	Pro	Leu	Thr	Glu	Ala	Ile	Gln	Ala	Leu	Phe		
225					230				235						240		
Glu	Arg	Gly	Glu	Arg	Arg	Leu	Asn	Leu	Asp	Val	Gln	Cys	Asp	Ser	Cys		
			245				250						255				
Gln	Glu	Leu	Ala	Val	Val	Pro	Val	Phe	Val	Asp	Pro	Gly	Glu	Glu	Ser		
		260					265						270				
His	Arg	Pro	Phe	Val	Val	Val	Gln	Ala	Arg	Leu	Gly	Asp	Ser	Arg	His		
	275						280					285					
Arg	Ile	Arg	Lys	Arg	Gly	Leu	Glu	Cys	Asp	Gly	Arg	Thr	Asn	Leu	Cys		
	290				295					300							
Cys	Arg	Gln	Gln	Phe	Phe	Ile	Asp	Phe	Arg	Leu	Ile	Gly	Trp	Asn	Asp		
305					310					315					320		
Trp	Ile	Ile	Ala	Pro	Thr	Gly	Tyr	Tyr	Gly	Asn	Tyr	Cys	Glu	Gly	Ser		
			325						330					335			
Cys	Pro	Ala	Tyr	Leu	Ala	Gly	Val	Pro	Gly	Ser	Ala	Ser	Ser	Phe	His		
		340						345					350				
Thr	Ala	Val	Val	Asn	Gln	Tyr	Arg	Met	Arg	Gly	Leu	Asn	Pro	Gly	Thr		
	355						360					365					
Val	Asn	Ser	Cys	Cys	Ile	Pro	Thr	Lys	Leu	Ser	Thr	Met	Ser	Met	Leu		
	370				375						380						
Tyr	Phe	Asp	Asp	Glu	Tyr	Asn	Ile	Val	Lys	Arg	Asp	Val	Pro	Asn	Met		
385					390					395					400		
Ile	Val	Glu	Glu	Cys	Gly	Cys	Ala										
				405													

<210> 23  
 <211> 561  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 23  
 Pro Met Arg Asp Leu Pro Leu Thr Ser Leu Ala Leu Val Leu Ser Ala  
 1 5 10 15  
 Leu Gly Ala Leu Leu Gly Thr Glu Ala Leu Arg Ala Glu Glu Pro Ala  
 20 25 30  
 Val Gly Thr Ser Gly Leu Ile Phe Arg Glu Asp Leu Asp Trp Pro Pro  
 35 40 45  
 Gly Ile Pro Gln Glu Pro Leu Cys Leu Val Ala Leu Gly Gly Asp Ser  
 50 55 60  
 Asn Gly Ser Ser Ser Pro Leu Arg Val Val Gly Ala Leu Ser Ala Tyr  
 65 70 75 80

Glu	Gln	Ala	Phe	Leu	Gly	Ala	Val	Gln	Arg	Ala	Arg	Trp	Gly	Pro	Arg	
				85					90					95		
Asp	Leu	Ala	Thr	Phe	Gly	Val	Cys	Asn	Thr	Gly	Asp	Arg	Gln	Ala	Ala	
			100					105					110			
Leu	Pro	Ser	Leu	Arg	Arg	Leu	Gly	Ala	Trp	Leu	Arg	Asp	Pro	Gly	Gly	
		115					120					125				
Gln	Arg	Leu	Val	Val	Leu	His	Leu	Glu	Glu	Val	Thr	Trp	Glu	Pro	Thr	
	130					135					140					
Pro	Ser	Leu	Arg	Phe	Gln	Glu	Pro	Pro	Pro	Gly	Gly	Ala	Gly	Pro	Pro	
145					150					155					160	
Glu	Leu	Ala	Leu	Leu	Val	Leu	Tyr	Pro	Gly	Pro	Gly	Pro	Glu	Val	Thr	
				165					170					175		
Val	Thr	Arg	Ala	Gly	Leu	Pro	Gly	Ala	Gln	Ser	Leu	Cys	Pro	Ser	Arg	
			180					185					190			
Asp	Thr	Arg	Tyr	Leu	Val	Leu	Ala	Val	Asp	Arg	Pro	Ala	Gly	Ala	Trp	
		195					200					205				
Arg	Gly	Ser	Gly	Leu	Ala	Leu	Thr	Leu	Gln	Pro	Arg	Gly	Glu	Asp	Ser	
	210					215					220					
Arg	Leu	Ser	Thr	Ala	Arg	Leu	Gln	Ala	Leu	Leu	Phe	Gly	Asp	Asp	His	
225					230				235						240	
Arg	Cys	Phe	Thr	Arg	Met	Thr	Pro	Ala	Leu	Leu	Leu	Leu	Pro	Arg	Ser	
				245					250					255		
Glu	Pro	Ala	Pro	Leu	Pro	Ala	His	Gly	Gln	Leu	Asp	Thr	Val	Pro	Phe	
		260						265					270			
Pro	Pro	Pro	Arg	Pro	Ser	Ala	Glu	Leu	Glu	Glu	Ser	Pro	Pro	Ser	Ala	
		275					280					285				
Asp	Pro	Phe	Leu	Glu	Thr	Leu	Thr	Arg	Leu	Val	Arg	Ala	Leu	Arg	Val	
	290					295					300					
Pro	Pro	Ala	Arg	Ala	Ser	Ala	Pro	Arg	Leu	Ala	Leu	Asp	Pro	Asp	Ala	
305					310					315					320	
Leu	Ala	Gly	Phe	Pro	Gln	Gly	Leu	Val	Asn	Leu	Ser	Asp	Pro	Ala	Ala	
				325					330					335		
Leu	Glu	Arg	Leu	Leu	Asp	Gly	Glu	Glu	Pro	Leu	Leu	Leu	Leu	Leu	Arg	
			340					345					350			
Pro	Thr	Ala	Ala	Thr	Thr	Gly	Asp	Pro	Ala	Pro	Leu	His	Asp	Pro	Thr	
		355					360					365				
Ser	Ala	Pro	Trp	Ala	Thr	Ala	Leu	Ala	Arg	Arg	Val	Ala	Ala	Glu	Leu	
	370					375					380					
Gln	Ala	Ala	Ala	Ala	Glu	Leu	Arg	Ser	Leu	Pro	Gly	Leu	Pro	Pro	Ala	
385					390					395					400	
Thr	Ala	Pro	Leu	Leu	Ala	Arg	Leu	Leu	Ala	Leu	Cys	Pro	Gly	Gly	Pro	
				405					410					415		
Gly	Gly	Leu	Gly	Asp	Pro	Leu	Arg	Ala	Leu	Leu	Leu	Leu	Lys	Ala	Leu	
			420					425					430			
Gln	Gly	Leu	Arg	Val	Glu	Trp	Arg	Gly	Arg	Asp	Pro	Arg	Gly	Pro	Gly	
		435					440					445				
Arg	Ala	Gln	Arg	Ser	Ala	Gly	Ala	Thr	Ala	Ala	Asp	Gly	Pro	Cys	Ala	
	450					455					460					
Leu	Arg	Glu	Leu	Ser	Val	Asp	Leu	Arg	Ala	Glu	Arg	Ser	Val	Leu	Ile	
465					470					475					480	
Pro	Glu	Thr	Tyr	Gln	Ala	Asn	Asn	Cys	Gln	Gly	Val	Cys	Gly	Trp	Pro	
				485					490					495		
Gln	Ser	Asp	Arg	Asn	Pro	Arg	Tyr	Gly	Asn	His	Val	Val	Leu	Leu	Leu	
		500						505					510			
Lys	Met	Gln	Ala	Arg	Gly	Ala	Ala	Leu	Ala	Arg	Pro	Pro	Cys	Cys	Val	
		515					520					525				
Pro	Thr	Ala	Tyr	Ala	Gly	Lys	Leu	Leu	Ile	Ser	Leu	Ser	Glu	Glu	Arg	





Val Asn Ser Lys Ile Pro Lys Ala Cys Cys Val Pro Thr Glu Leu Ser  
 355 360 365  
 Ala Ile Ser Met Leu Tyr Leu Asp Glu Asn Glu Lys Val Val Leu Lys  
 370 375 380  
 Asn Tyr Gln Asp Met Val Val Glu Gly Cys Gly Cys Arg  
 385 390 395

<210> 25  
 <211> 473  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 25  
 Pro Met Ala Gly Ala Ser Arg Leu Leu Phe Leu Trp Leu Gly Cys Phe  
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 Cys Val Ser Leu Ala Gln Gly Glu Arg Pro Lys Pro Pro Phe Pro Glu  
 20 25 30  
 Leu Arg Lys Ala Val Pro Gly Asp Arg Thr Ala Gly Gly Pro Asp  
 35 40 45  
 Ser Glu Leu Gln Pro Gln Asp Lys Val Ser Glu His Met Leu Arg Leu  
 50 55 60  
 Tyr Asp Arg Tyr Ser Thr Val Gln Ala Ala Arg Thr Pro Gly Ser Leu  
 65 70 75 80  
 Glu Gly Gly Ser Gln Pro Trp Arg Pro Arg Leu Leu Arg Glu Gly Asn  
 85 90 95  
 Thr Val Arg Ser Phe Arg Ala Ala Ala Glu Thr Leu Glu Arg Lys  
 100 105 110  
 Gly Leu Tyr Ile Phe Asn Leu Thr Ser Leu Thr Lys Ser Glu Asn Ile  
 115 120 125  
 Leu Ser Ala Thr Leu Tyr Phe Cys Ile Gly Glu Leu Gly Asn Ile Ser  
 130 135 140  
 Leu Ser Cys Pro Val Ser Gly Gly Cys Ser His His Ala Gln Arg Lys  
 145 150 155 160  
 His Ile Gln Ile Asp Leu Ser Ala Trp Thr Leu Lys Phe Ser Arg Asn  
 165 170 175  
 Gln Ser Gln Leu Leu Gly His Leu Ser Val Asp Met Ala Lys Ser His  
 180 185 190  
 Arg Asp Ile Met Ser Trp Leu Ser Lys Asp Ile Thr Gln Phe Leu Arg  
 195 200 205  
 Lys Ala Lys Glu Asn Glu Glu Phe Leu Ile Gly Phe Asn Ile Thr Ser  
 210 215 220  
 Lys Gly Arg Gln Leu Pro Lys Arg Arg Leu Pro Phe Pro Glu Pro Tyr  
 225 230 235 240  
 Ile Leu Val Tyr Ala Asn Asp Ala Ala Ile Ser Glu Pro Glu Ser Val  
 245 250 255  
 Val Ser Ser Leu Gln Gly His Arg Asn Phe Pro Thr Gly Thr Val Pro  
 260 265 270  
 Lys Trp Asp Ser His Ile Arg Ala Leu Ser Ile Glu Arg Arg Lys  
 275 280 285  
 Lys Arg Ser Thr Gly Val Leu Leu Pro Leu Gln Asn Asn Glu Leu Pro  
 290 295 300  
 Gly Ala Glu Tyr Gln Tyr Lys Lys Asp Glu Val Trp Glu Glu Arg Lys  
 305 310 315 320  
 Pro Tyr Lys Thr Leu Gln Ala Gln Ala Pro Glu Lys Ser Lys Asn Lys  
 325 330 335  
 Lys Lys Gln Arg Lys Gly Pro His Arg Lys Ser Gln Thr Leu Gln Phe

			340					345					350				
Asp	Glu	Gln	Thr	Leu	Lys	Lys	Ala	Arg	Arg	Lys	Gln	Trp	Ile	Glu	Pro		
		355					360					365					
Arg	Asn	Cys	Ala	Arg	Arg	Tyr	Leu	Lys	Val	Asp	Phe	Ala	Asp	Ile	Gly		
	370					375					380						
Trp	Ser	Glu	Trp	Ile	Ile	Ser	Pro	Lys	Ser	Phe	Asp	Ala	Tyr	Tyr	Cys		
385					390					395					400		
Ser	Gly	Ala	Cys	Gln	Phe	Pro	Met	Pro	Lys	Ser	Leu	Lys	Pro	Ser	Asn		
			405						410						415		
His	Ala	Thr	Ile	Gln	Ser	Ile	Val	Arg	Ala	Val	Gly	Val	Val	Pro	Gly		
			420				425							430			
Ile	Pro	Glu	Pro	Cys	Cys	Val	Pro	Glu	Lys	Met	Ser	Ser	Leu	Ser	Ile		
	435						440					445					
Leu	Phe	Phe	Asp	Glu	Asn	Lys	Asn	Val	Val	Leu	Lys	Val	Tyr	Pro	Asn		
	450					455					460						
Met	Thr	Val	Glu	Ser	Cys	Ala	Cys	Arg									
465					470												

<210> 26  
 <211> 479  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 26

Pro	Met	Ala	His	Val	Pro	Ala	Arg	Thr	Ser	Pro	Gly	Pro	Gly	Pro	Gln		
1				5					10					15			
Leu	Leu	Leu	Leu	Leu	Leu	Pro	Leu	Phe	Leu	Leu	Leu	Leu	Arg	Asp	Val		
			20				25						30				
Ala	Gly	Ser	His	Arg	Ala	Pro	Ala	Trp	Ser	Ala	Leu	Pro	Ala	Ala	Ala		
	35					40						45					
Asp	Gly	Leu	Gln	Gly	Asp	Arg	Asp	Leu	Gln	Arg	His	Pro	Gly	Asp	Ala		
50					55						60						
Ala	Ala	Thr	Leu	Gly	Pro	Ser	Ala	Gln	Asp	Met	Val	Ala	Val	His	Met		
65					70				75						80		
His	Arg	Leu	Tyr	Glu	Lys	Tyr	Ser	Arg	Gln	Gly	Ala	Arg	Pro	Gly	Gly		
			85					90						95			
Gly	Asn	Thr	Val	Arg	Ser	Phe	Arg	Ala	Arg	Leu	Glu	Val	Val	Asp	Gln		
	100						105						110				
Lys	Ala	Val	Tyr	Phe	Phe	Asn	Leu	Thr	Ser	Met	Gln	Asp	Ser	Glu	Met		
	115					120						125					
Ile	Leu	Thr	Ala	Thr	Phe	His	Phe	Tyr	Ser	Glu	Pro	Pro	Arg	Trp	Pro		
	130					135					140						
Arg	Ala	Leu	Glu	Val	Leu	Cys	Lys	Pro	Arg	Ala	Lys	Asn	Ala	Ser	Gly		
145					150				155						160		
Arg	Pro	Leu	Pro	Leu	Gly	Pro	Pro	Thr	Arg	Gln	His	Leu	Leu	Phe	Arg		
			165					170						175			
Ser	Leu	Ser	Gln	Asn	Thr	Ala	Thr	Gln	Gly	Leu	Leu	Arg	Gly	Ala	Met		
		180					185						190				
Ala	Leu	Ala	Pro	Pro	Pro	Arg	Gly	Leu	Trp	Gln	Ala	Lys	Asp	Ile	Ser		
	195						200					205					
Pro	Ile	Val	Lys	Ala	Ala	Arg	Arg	Asp	Gly	Glu	Leu	Leu	Ser	Ala			
	210					215					220						
Gln	Leu	Asp	Ser	Glu	Glu	Arg	Asp	Pro	Gly	Val	Pro	Arg	Pro	Ser	Pro		
225					230					235					240		
Tyr	Ala	Pro	Tyr	Ile	Leu	Val	Tyr	Ala	Asn	Asp	Leu	Ala	Ile	Ser	Glu		
			245					250						255			

Pro	Asn	Ser	Val	Ala	Val	Thr	Leu	Gln	Arg	Tyr	Asp	Pro	Phe	Pro	Ala		
			260					265					270				
Gly	Asp	Pro	Glu	Pro	Arg	Ala	Ala	Pro	Asn	Asn	Ser	Ala	Asp	Pro	Arg		
		275					280					285					
Val	Arg	Arg	Ala	Ala	Gln	Ala	Thr	Gly	Pro	Leu	Gln	Asp	Asn	Glu	Leu		
	290				295						300						
Pro	Gly	Leu	Asp	Glu	Arg	Pro	Pro	Arg	Ala	His	Ala	Gln	His	Phe	His		
305					310					315					320		
Lys	His	Gln	Leu	Trp	Pro	Ser	Pro	Phe	Arg	Ala	Leu	Lys	Pro	Arg	Pro		
			325					330						335			
Gly	Arg	Lys	Asp	Arg	Arg	Lys	Lys	Gly	Gln	Glu	Val	Phe	Met	Ala	Ala		
			340					345					350				
Ser	Gln	Val	Leu	Asp	Phe	Asp	Glu	Lys	Thr	Met	Gln	Lys	Ala	Arg	Arg		
		355					360					365					
Lys	Gln	Trp	Asp	Glu	Pro	Arg	Val	Cys	Ser	Arg	Arg	Tyr	Leu	Lys	Val		
	370					375					380						
Asp	Phe	Ala	Asp	Ile	Gly	Trp	Asn	Glu	Trp	Ile	Ile	Ser	Pro	Lys	Ser		
385					390					395					400		
Phe	Asp	Ala	Tyr	Tyr	Cys	Ala	Gly	Ala	Cys	Glu	Phe	Pro	Met	Pro	Lys		
			405					410						415			
Ile	Val	Arg	Pro	Ser	Asn	His	Ala	Thr	Ile	Gln	Ser	Ile	Val	Arg	Ala		
		420					425						430				
Val	Gly	Ile	Ile	Pro	Gly	Ile	Pro	Glu	Pro	Cys	Cys	Val	Pro	Asp	Lys		
	435					440					445						
Met	Asn	Ser	Leu	Gly	Val	Leu	Phe	Leu	Asp	Glu	Asn	Arg	Asn	Val	Val		
	450					455					460						
Leu	Lys	Val	Tyr	Pro	Asn	Met	Ser	Val	Asp	Thr	Cys	Ala	Cys	Arg			
465					470					475							

<210> 27  
 <211> 409  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 27

Pro	Met	Ile	Pro	Gly	Asn	Arg	Met	Leu	Met	Val	Val	Leu	Leu	Cys	Gln		
1				5				10						15			
Val	Leu	Leu	Gly	Gly	Ala	Ser	His	Ala	Ser	Leu	Ile	Pro	Glu	Thr	Gly		
			20					25					30				
Lys	Lys	Lys	Val	Ala	Glu	Ile	Gln	Gly	His	Ala	Gly	Gly	Arg	Arg	Ser		
		35					40					45					
Gly	Gln	Ser	His	Glu	Leu	Leu	Arg	Asp	Phe	Glu	Ala	Thr	Leu	Leu	Gln		
	50					55					60						
Met	Phe	Gly	Leu	Arg	Arg	Arg	Pro	Gln	Pro	Ser	Lys	Ser	Ala	Val	Ile		
65				70						75					80		
Pro	Asp	Tyr	Met	Arg	Asp	Leu	Tyr	Arg	Leu	Gln	Ser	Gly	Glu	Glu	Glu		
			85					90					95				
Glu	Glu	Gln	Ile	His	Ser	Thr	Gly	Leu	Glu	Tyr	Pro	Glu	Arg	Pro	Ala		
		100					105					110					
Ser	Arg	Ala	Asn	Thr	Val	Arg	Ser	Phe	His	His	Glu	Glu	His	Leu	Glu		
		115					120					125					
Asn	Ile	Pro	Gly	Thr	Ser	Glu	Asn	Ser	Ala	Phe	Arg	Phe	Leu	Phe	Asn		
	130					135					140						
Leu	Ser	Ser	Ile	Pro	Glu	Asn	Glu	Ala	Ile	Ser	Ser	Ala	Glu	Leu	Arg		
145				150						155					160		
Leu	Phe	Arg	Glu	Gln	Val	Asp	Gln	Gly	Pro	Asp	Trp	Glu	Arg	Gly	Phe		

His	Arg	Ile	Asn	Ile	Tyr	Glu	Val	Met	Lys	Pro	Pro	Ala	Glu	Val	Val
			180						185				190		
Pro	Gly	His	Leu	Ile	Thr	Arg	Leu	Leu	Asp	Thr	Arg	Leu	Val	His	His
		195					200					205			
Asn	Val	Thr	Arg	Trp	Glu	Thr	Phe	Asp	Val	Ser	Pro	Ala	Val	Leu	Arg
	210					215					220				
Trp	Thr	Arg	Glu	Lys	Gln	Pro	Asn	Tyr	Gly	Leu	Ala	Ile	Glu	Val	Thr
225					230					235					240
His	Leu	His	Gln	Thr	Arg	Thr	His	Gln	Gly	Gln	His	Val	Arg	Ile	Ser
			245						250					255	
Arg	Ser	Leu	Pro	Gln	Gly	Ser	Gly	Asn	Trp	Ala	Gln	Leu	Arg	Pro	Leu
		260						265					270		
Leu	Val	Thr	Phe	Gly	His	Asp	Gly	Arg	Gly	His	Ala	Leu	Thr	Arg	Arg
	275						280					285			
Arg	Arg	Ala	Lys	Arg	Ser	Pro	Lys	His	His	Ser	Gln	Arg	Ala	Arg	Lys
	290					295					300				
Lys	Asn	Lys	Asn	Cys	Arg	Arg	His	Ser	Leu	Tyr	Val	Asp	Phe	Ser	Asp
305				310						315					320
Val	Gly	Trp	Asn	Asp	Trp	Ile	Val	Ala	Pro	Pro	Gly	Tyr	Gln	Ala	Phe
			325						330					335	
Tyr	Cys	His	Gly	Asp	Cys	Pro	Phe	Pro	Leu	Ala	Asp	His	Leu	Asn	Ser
		340					345						350		
Thr	Asn	His	Ala	Ile	Val	Gln	Thr	Leu	Val	Asn	Ser	Val	Asn	Ser	Ser
	355					360						365			
Ile	Pro	Lys	Ala	Cys	Cys	Val	Pro	Thr	Glu	Leu	Ser	Ala	Ile	Ser	Met
	370				375						380				
Leu	Tyr	Leu	Asp	Glu	Tyr	Asp	Lys	Val	Val	Leu	Lys	Asn	Tyr	Gln	Glu
385				390						395					400
Met	Val	Val	Glu	Gly	Cys	Gly	Cys	Arg							
			405												

<210> 28  
 <211> 455  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 28

Pro	Met	His	Leu	Thr	Val	Phe	Leu	Leu	Lys	Gly	Ile	Val	Gly	Phe	Leu
1			5						10					15	
Trp	Ser	Cys	Trp	Val	Leu	Val	Gly	Tyr	Ala	Lys	Gly	Gly	Leu	Gly	Asp
		20						25					30		
Asn	His	Val	His	Ser	Ser	Phe	Ile	Tyr	Arg	Arg	Leu	Arg	Asn	His	Glu
	35					40						45			
Arg	Arg	Glu	Ile	Gln	Arg	Glu	Ile	Leu	Ser	Ile	Leu	Gly	Leu	Pro	His
	50				55						60				
Arg	Pro	Arg	Pro	Phe	Ser	Pro	Gly	Lys	Gln	Ala	Ser	Ser	Ala	Pro	Leu
65				70					75					80	
Phe	Met	Leu	Asp	Leu	Tyr	Asn	Ala	Met	Thr	Asn	Glu	Glu	Asn	Pro	Glu
			85					90					95		
Glu	Ser	Glu	Tyr	Ser	Val	Arg	Ala	Ser	Leu	Ala	Glu	Glu	Thr	Arg	Gly
		100					105						110		
Ala	Arg	Lys	Gly	Tyr	Pro	Ala	Ser	Pro	Asn	Gly	Tyr	Pro	Arg	Arg	Ile
	115					120						125			
Gln	Leu	Ser	Arg	Thr	Thr	Pro	Leu	Thr	Thr	Gln	Ser	Pro	Pro	Leu	Ala
	130					135					140				

Ser	Leu	His	Asp	Thr	Asn	Phe	Leu	Asn	Asp	Ala	Asp	Met	Val	Met	Ser
145					150					155					160
Phe	Val	Asn	Leu	Val	Glu	Arg	Asp	Lys	Asp	Phe	Ser	His	Gln	Arg	Arg
			165						170						175
His	Tyr	Lys	Glu	Phe	Arg	Phe	Asp	Leu	Thr	Gln	Ile	Pro	His	Gly	Glu
			180					185						190	
Ala	Val	Thr	Ala	Ala	Glu	Phe	Arg	Ile	Tyr	Lys	Asp	Arg	Ser	Asn	Asn
		195					200					205			
Arg	Phe	Glu	Asn	Glu	Thr	Ile	Lys	Ile	Ser	Ile	Tyr	Gln	Ile	Ile	Lys
	210				215						220				
Glu	Tyr	Thr	Asn	Arg	Asp	Ala	Asp	Leu	Phe	Leu	Leu	Asp	Thr	Arg	Lys
225					230					235					240
Ala	Gln	Ala	Leu	Asp	Val	Gly	Trp	Leu	Val	Phe	Asp	Ile	Thr	Val	Thr
			245					250							255
Ser	Asn	His	Trp	Val	Ile	Asn	Pro	Gln	Asn	Asn	Leu	Gly	Leu	Gln	Leu
			260				265						270		
Cys	Ala	Glu	Thr	Gly	Asp	Gly	Arg	Ser	Ile	Asn	Val	Lys	Ser	Ala	Gly
	275						280					285			
Leu	Val	Gly	Arg	Gln	Gly	Pro	Gln	Ser	Lys	Gln	Pro	Phe	Met	Val	Ala
	290					295					300				
Phe	Phe	Lys	Ala	Ser	Glu	Val	Leu	Leu	Arg	Ser	Val	Arg	Ala	Ala	Asn
305					310					315					320
Lys	Arg	Lys	Asn	Gln	Asn	Arg	Asn	Lys	Ser	Ser	Ser	His	Gln	Asp	Ser
			325						330					335	
Ser	Arg	Met	Ser	Ser	Val	Gly	Asp	Tyr	Asn	Thr	Ser	Glu	Gln	Lys	Gln
			340					345					350		
Ala	Cys	Lys	Lys	His	Glu	Leu	Tyr	Val	Ser	Phe	Arg	Asp	Leu	Gly	Trp
		355					360					365			
Gln	Asp	Trp	Ile	Ile	Ala	Pro	Glu	Gly	Tyr	Ala	Ala	Phe	Tyr	Cys	Asp
	370					375					380				
Gly	Glu	Cys	Ser	Phe	Pro	Leu	Asn	Ala	His	Met	Asn	Ala	Thr	Asn	His
385					390					395					400
Ala	Ile	Val	Gln	Thr	Leu	Val	His	Leu	Met	Phe	Pro	Asp	His	Val	Pro
			405						410					415	
Lys	Pro	Cys	Cys	Ala	Pro	Thr	Lys	Leu	Asn	Ala	Ile	Ser	Val	Leu	Tyr
			420					425					430		
Phe	Asp	Asp	Ser	Ser	Asn	Val	Ile	Leu	Lys	Lys	Tyr	Arg	Asn	Met	Val
	435						440					445			
Val	Arg	Ser	Cys	Gly	Cys	His									
	450					455									

<210> 29  
 <211> 112  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 29  
 Pro Ser Ser Ala Ser Asp Tyr Asn Ser Ser Glu Leu Lys Thr Ala Cys  
 1 5 10 15  
 Arg Lys His Glu Leu Tyr Val Ser Phe Gln Asp Leu Gly Trp Gln Trp  
 20 25 30  
 Ile Ile Ala Pro Lys Gly Tyr Ala Ala Asn Tyr Cys Asp Gly Glu Cys  
 35 40 45  
 Ser Pro Pro Leu Asn His Thr Ala Asn His Ala Ile Val Gln Thr Leu  
 50 55 60  
 Val His Leu Met Asn Pro Glu Tyr Val Pro Lys Pro Cys Cys Ala Pro

65					70					75					80
Thr	Lys	Leu	Asn	Ala	Ile	Ser	Val	Leu	Tyr	Phe	Asp	Asp	Asn	Ser	Asn
				85					90					95	
Val	Ile	Lys	Lys	Tyr	Arg	Asn	Met	Val	Val	Arg	Ala	Cys	Gly	Cys	His
			100					105					110		

<210> 30  
 <211> 112  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 30															
Pro	Ala	Asn	Val	Ala	Glu	Asn	Ser	Ser	Ser	Asp	Gln	Arg	Gln	Ala	Cys
1				5					10					15	
Lys	Lys	His	Glu	Leu	Tyr	Val	Ser	Phe	Arg	Asp	Leu	Gly	Trp	Gln	Trp
			20					25					30		
Ile	Ile	Ala	Pro	Glu	Gly	Tyr	Ala	Ala	Tyr	Tyr	Cys	Glu	Gly	Glu	Cys
		35					40					45			
Ala	Phe	Pro	Leu	Asn	Ser	Ala	Thr	Asn	His	Ala	Ile	Val	Gln	Thr	Leu
	50					55					60				
Val	His	Phe	Ile	Asn	Pro	Glu	Thr	Val	Pro	Lys	Pro	Cys	Cys	Ala	Pro
65					70					75					80
Thr	Gln	Leu	Asn	Ala	Ile	Ser	Val	Leu	Tyr	Phe	Asp	Asp	Ser	Ser	Asn
				85					90					95	
Val	Ile	Lys	Lys	Tyr	Arg	Asn	Met	Val	Val	Arg	Ala	Cys	Gly	Cys	His
			100					105					110		

<210> 31  
 <211> 403  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 31															
Pro	Met	Thr	Ala	Leu	Pro	Gly	Pro	Leu	Trp	Leu	Leu	Gly	Leu	Ala	Leu
1				5					10					15	
Cys	Ala	Leu	Gly	Gly	Gly	Gly	Pro	Gly	Leu	Arg	Pro	Pro	Pro	Gly	Cys
			20					25					30		
Pro	Gln	Arg	Arg	Leu	Gly	Ala	Arg	Glu	Arg	Arg	Asp	Val	Gln	Arg	Glu
		35					40					45			
Ile	Leu	Ala	Val	Leu	Gly	Leu	Pro	Gly	Arg	Pro	Arg	Pro	Arg	Ala	Pro
	50					55					60				
Pro	Ala	Ala	Ser	Arg	Leu	Pro	Ala	Ser	Ala	Pro	Leu	Phe	Met	Leu	Asp
65					70					75					80
Leu	Tyr	His	Ala	Met	Ala	Gly	Asp	Asp	Asp	Glu	Asp	Gly	Ala	Pro	Ala
				85					90					95	
Glu	Arg	Arg	Leu	Gly	Arg	Ala	Asp	Leu	Val	Met	Ser	Phe	Val	Asn	Met
			100					105					110		
Val	Glu	Arg	Asp	Arg	Ala	Leu	Gly	His	Gln	Glu	Pro	His	Trp	Lys	Glu
		115					120					125			
Phe	Arg	Phe	Asp	Leu	Thr	Gln	Ile	Pro	Ala	Gly	Glu	Ala	Val	Thr	Ala
	130					135					140				
Ala	Glu	Phe	Arg	Ile	Tyr	Lys	Val	Pro	Ser	Ile	His	Leu	Leu	Asn	Arg
145					150					155					160
Thr	Leu	His	Val	Ser	Met	Phe	Gln	Val	Val	Gln	Glu	Gln	Ser	Asn	Arg
				165					170						175

Glu	Ser	Asp	Leu	Phe	Phe	Leu	Asp	Leu	Gln	Thr	Leu	Arg	Ala	Gly	Asp	
			180					185					190			
Glu	Gly	Trp	Leu	Val	Leu	Asp	Val	Thr	Ala	Ala	Ser	Asp	Cys	Trp	Leu	
		195					200					205				
Leu	Lys	Arg	His	Lys	Asp	Leu	Gly	Leu	Arg	Leu	Tyr	Val	Glu	Thr	Glu	
	210				215						220					
Asp	Gly	His	Ser	Val	Asp	Pro	Gly	Leu	Ala	Gly	Leu	Leu	Gly	Gln	Arg	
225					230					235					240	
Ala	Pro	Arg	Ser	Gln	Gln	Pro	Phe	Val	Val	Thr	Phe	Phe	Arg	Ala	Ser	
				245					250					255		
Pro	Ser	Pro	Ile	Arg	Thr	Pro	Arg	Ala	Val	Arg	Pro	Leu	Arg	Arg	Arg	
			260					265					270			
Gln	Pro	Lys	Lys	Ser	Asn	Glu	Leu	Pro	Gln	Ala	Asn	Arg	Leu	Pro	Gly	
		275					280					285				
Ile	Phe	Asp	Asp	Val	His	Gly	Ser	His	Gly	Arg	Gln	Val	Cys	Arg	Arg	
	290					295					300					
His	Glu	Leu	Tyr	Val	Ser	Phe	Gln	Asp	Leu	Gly	Trp	Leu	Asp	Trp	Val	
305					310					315					320	
Ile	Ala	Pro	Gln	Gly	Tyr	Ser	Ala	Tyr	Tyr	Cys	Glu	Gly	Glu	Cys	Ser	
			325						330					335		
Phe	Pro	Leu	Asp	Ser	Cys	Met	Asn	Ala	Thr	Asn	His	Ala	Ile	Leu	Gln	
			340					345					350			
Ser	Leu	Val	His	Leu	Met	Lys	Pro	Asn	Ala	Val	Pro	Lys	Ala	Cys	Cys	
	355						360					365				
Ala	Pro	Thr	Lys	Leu	Ser	Ala	Thr	Ser	Val	Leu	Tyr	Tyr	Asp	Ser	Ser	
	370					375					380					
Asn	Asn	Val	Ile	Leu	Arg	Lys	His	Arg	Asn	Met	Val	Val	Lys	Ala	Cys	
385					390					395					400	
Gly	Cys	His														

<210> 32  
 <211> 425  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 32

Pro	Met	Gly	Ser	Leu	Val	Leu	Thr	Leu	Cys	Ala	Leu	Phe	Cys	Leu	Ala	
1				5					10					15		
Ala	Tyr	Leu	Val	Ser	Gly	Ser	Pro	Ile	Met	Asn	Leu	Glu	Gln	Ser	Pro	
		20					25						30			
Leu	Glu	Glu	Asp	Met	Ser	Leu	Phe	Gly	Asp	Val	Phe	Ser	Glu	Gln	Asp	
	35						40					45				
Gly	Val	Asp	Phe	Asn	Thr	Leu	Leu	Gln	Ser	Met	Lys	Asp	Glu	Phe	Leu	
	50					55					60					
Lys	Thr	Leu	Asn	Leu	Ser	Asp	Ile	Pro	Thr	Gln	Asp	Ser	Ala	Lys	Val	
65					70					75					80	
Asp	Pro	Pro	Glu	Tyr	Met	Leu	Glu	Leu	Tyr	Asn	Lys	Phe	Ala	Thr	Asp	
			85						90					95		
Arg	Thr	Ser	Met	Pro	Ser	Ala	Asn	Ile	Arg	Ser	Phe	Lys	Asn	Glu		
			100					105					110			
Asp	Leu	Phe	Ser	Gln	Pro	Val	Ser	Phe	Asn	Gly	Leu	Arg	Lys	Tyr	Pro	
	115						120					125				
Leu	Leu	Phe	Asn	Val	Ser	Ile	Pro	His	His	Glu	Glu	Val	Ile	Met	Ala	
	130					135					140					
Glu	Leu	Arg	Leu	Tyr	Thr	Leu	Val	Gln	Arg	Asp	Arg	Met	Ile	Tyr	Asp	





Gln	Ile	Leu	Asp	Leu	His	Asp	Phe	Gln	Gly	Asp	Ala	Leu	Gln	Pro	Glu		
		115					120					125					
Asp	Phe	Leu	Glu	Glu	Asp	Glu	Tyr	His	Ala	Thr	Thr	Glu	Thr	Val	Ile		
		130					135					140					
Ser	Met	Ala	Gln	Glu	Thr	Asp	Pro	Ala	Val	Gln	Thr	Asp	Gly	Ser	Pro		
145						150					155				160		
Leu	Cys	Cys	His	Phe	His	Phe	Ser	Pro	Lys	Val	Met	Phe	Thr	Lys	Val		
				165						170				175			
Leu	Lys	Ala	Gln	Leu	Trp	Val	Tyr	Leu	Arg	Pro	Val	Pro	Arg	Pro	Ala		
			180						185					190			
Thr	Val	Tyr	Leu	Gln	Ile	Leu	Arg	Leu	Lys	Pro	Leu	Thr	Gly	Glu	Gly		
		195					200					205					
Thr	Ala	Gly	Gly	Gly	Gly	Gly	Gly	Arg	Arg	His	Ile	Arg	Ile	Arg	Ser		
		210					215				220						
Leu	Lys	Ile	Glu	Leu	His	Ser	Arg	Ser	Gly	His	Trp	Gln	Ser	Ile	Asp		
225						230				235					240		
Phe	Lys	Gln	Val	Leu	His	Ser	Trp	Phe	Arg	Gln	Pro	Gln	Ser	Asn	Trp		
				245						250				255			
Gly	Ile	Glu	Ile	Asn	Ala	Phe	Asp	Pro	Ser	Gly	Thr	Asp	Leu	Ala	Val		
			260					265					270				
Thr	Ser	Leu	Gly	Pro	Gly	Ala	Glu	Gly	Leu	His	Pro	Phe	Met	Glu	Leu		
		275					280					285					
Arg	Val	Leu	Glu	Asn	Thr	Lys	Arg	Ser	Arg	Arg	Asn	Leu	Gly	Leu	Asp		
		290				295					300						
Cys	Asp	Glu	His	Ser	Ser	Glu	Ser	Arg	Cys	Cys	Arg	Tyr	Pro	Leu	Thr		
305						310				315					320		
Val	Asp	Phe	Glu	Ala	Phe	Gly	Trp	Asp	Trp	Ile	Ile	Ala	Pro	Lys	Arg		
				325					330					335			
Tyr	Lys	Ala	Asn	Tyr	Cys	Ser	Gly	Gln	Cys	Glu	Tyr	Met	Phe	Met	Gln		
			340					345				350					
Lys	Tyr	Pro	His	Thr	His	Leu	Val	Gln	Gln	Ala	Asn	Pro	Arg	Gly	Ser		
		355					360					365					
Ala	Gly	Pro	Cys	Cys	Thr	Pro	Thr	Lys	Met	Ser	Pro	Ile	Asn	Met	Leu		
		370				375					380						
Tyr	Phe	Asn	Asp	Lys	Gln	Gln	Ile	Ile	Tyr	Gly	Lys	Ile	Pro	Gly	Met		
385					390					395					400		
Val	Val	Asp	Arg	Cys	Gly	Cys	Ser										
				405													

<210> 34

<211> 393

<212> PRT

<213> HOMO SAPIEN

<400> 34

Pro	Met	Val	Leu	Leu	Ser	Ile	Leu	Arg	Ile	Leu	Phe	Leu	Cys	Glu	Leu		
1				5					10					15			
Val	Leu	Phe	Met	Glu	His	Arg	Ala	Gln	Met	Ala	Glu	Gly	Gly	Gln	Ser		
			20					25					30				
Phe	Ile	Ala	Leu	Leu	Ala	Glu	Ala	Pro	Thr	Leu	Pro	Leu	Ile	Glu	Glu		
		35					40					45					
Met	Leu	Glu	Glu	Ser	Pro	Gly	Glu	Gln	Pro	Arg	Lys	Pro	Arg	Leu	Leu		
		50				55					60						
Gly	His	Ser	Leu	Arg	Tyr	Met	Leu	Glu	Leu	Tyr	Arg	Arg	Ser	Ala	Asp		
65					70					75				80			
Ser	His	Gly	His	Pro	Arg	Glu	Asn	Arg	Thr	Ile	Gly	Ala	Thr	Met	Val		

				85					90				95				
Arg	Leu	Val	Lys	Pro	Leu	Thr	Ser	Val	Ala	Arg	Pro	His	Arg	Gly	Thr		
			100					105					110				
Trp	His	Ile	Gln	Ile	Leu	Gly	Phe	Pro	Leu	Arg	Pro	Asn	Arg	Gly	Leu		
		115					120					125					
Tyr	Gln	Leu	Val	Arg	Ala	Thr	Val	Val	Tyr	Arg	His	His	Leu	Gln	Leu		
	130					135					140						
Thr	Arg	Phe	Asn	Leu	Ser	Cys	His	Val	Glu	Pro	Trp	Val	Gln	Lys	Asn		
145					150					155					160		
Pro	Thr	Asn	His	Phe	Pro	Ser	Ser	Glu	Gly	Asp	Ser	Ser	Lys	Pro	Ser		
				165					170						175		
Leu	Met	Ser	Asn	Ala	Trp	Lys	Glu	Met	Asp	Ile	Thr	Gln	Leu	Val	Gln		
			180					185					190				
Gln	Arg	Phe	Trp	Asn	Asn	Lys	Gly	His	Arg	Ile	Leu	Arg	Leu	Arg	Phe		
	195						200					205					
Met	Cys	Gln	Gln	Gln	Lys	Asp	Ser	Gly	Gly	Leu	Glu	Leu	Trp	His	Gly		
	210					215					220						
Thr	Ser	Ser	Leu	Asp	Ile	Ala	Phe	Leu	Leu	Leu	Tyr	Phe	Asn	Asp	Thr		
225					230					235					240		
His	Lys	Ser	Ile	Arg	Lys	Ala	Lys	Phe	Leu	Pro	Arg	Gly	Met	Glu	Glu		
				245				250						255			
Phe	Met	Glu	Arg	Glu	Ser	Leu	Leu	Arg	Arg	Thr	Arg	Gln	Ala	Asp	Gly		
			260					265					270				
Ile	Ser	Ala	Glu	Val	Thr	Ala	Ser	Ser	Ser	Lys	His	Ser	Gly	Pro	Glu		
	275						280					285					
Asn	Asn	Gln	Cys	Ser	Leu	His	Pro	Phe	Gln	Ile	Ser	Phe	Arg	Gln	Leu		
	290					295					300						
Gly	Trp	Asp	His	Trp	Ile	Ile	Ala	Pro	Pro	Phe	Tyr	Thr	Pro	Asn	Tyr		
305					310					315					320		
Cys	Lys	Gly	Thr	Cys	Leu	Arg	Val	Leu	Arg	Asp	Gly	Leu	Asn	Ser	Pro		
				325					330					335			
Asn	His	Ala	Ile	Ile	Gln	Asn	Leu	Ile	Asn	Gln	Leu	Val	Asp	Gln	Ser		
		340						345					350				
Val	Pro	Arg	Pro	Ser	Cys	Val	Pro	Tyr	Lys	Tyr	Val	Pro	Ile	Ser	Val		
	355						360					365					
Leu	Met	Ile	Glu	Ala	Asn	Gly	Ser	Ile	Leu	Tyr	Lys	Glu	Tyr	Glu	Gly		
	370					375					380						
Met	Ile	Ala	Glu	Ser	Cys	Thr	Cys	Arg									
385					390												

<210> 35

<211> 134

<212> PRT

<213> HOMO SAPIEN

<400> 35

Pro	Met	Arg	Lys	His	Val	Leu	Ala	Ala	Ser	Phe	Ser	Met	Leu	Ser	Leu		
1				5					10					15			
Leu	Val	Ile	Met	Gly	Asp	Thr	Asp	Ser	Lys	Thr	Asp	Ser	Ser	Phe	Ile		
			20					25					30				
Met	Asp	Ser	Asp	Pro	Arg	Arg	Cys	Met	Arg	His	His	Tyr	Val	Asp	Ser		
	35						40					45					
Ile	Ser	His	Pro	Leu	Tyr	Lys	Cys	Ser	Ser	Lys	Met	Val	Leu	Leu	Ala		
	50					55					60						
Arg	Cys	Glu	Gly	His	Cys	Ser	Gln	Ala	Ser	Arg	Ser	Glu	Pro	Leu	Val		
65					70					75					80		

Ser	Phe	Ser	Thr	Val	Leu	Lys	Gln	Pro	Phe	Arg	Ser	Ser	Cys	His	Cys
				85					90					95	
Cys	Arg	Pro	Gln	Thr	Ser	Lys	Leu	Lys	Ala	Leu	Arg	Leu	Arg	Cys	Ser
			100					105					110		
Gly	Gly	Met	Arg	Leu	Thr	Ala	Thr	Tyr	Arg	Tyr	Ile	Leu	Ser	Cys	His
		115					120					125			
Cys	Glu	Glu	Cys	Asn	Ser										
	130														

<210> 36  
 <211> 373  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 36

Pro	Met	Pro	Pro	Pro	Gln	Gln	Gly	Pro	Cys	Gly	His	His	Leu	Leu	Leu
1				5					10					15	
Leu	Leu	Ala	Leu	Leu	Leu	Pro	Ser	Leu	Pro	Leu	Thr	Arg	Ala	Pro	Val
			20					25					30		
Pro	Pro	Gly	Pro	Ala	Ala	Ala	Leu	Leu	Gln	Ala	Leu	Gly	Leu	Arg	Asp
		35					40					45			
Glu	Pro	Gln	Gly	Ala	Pro	Arg	Leu	Arg	Pro	Val	Pro	Pro	Val	Met	Trp
	50					55					60				
Arg	Leu	Phe	Arg	Arg	Arg	Asp	Pro	Gln	Glu	Thr	Arg	Ser	Gly	Ser	Arg
65					70					75					80
Arg	Thr	Ser	Pro	Gly	Val	Thr	Leu	Gln	Pro	Cys	His	Val	Glu	Glu	Leu
				85					90					95	
Gly	Val	Ala	Gly	Asn	Ile	Val	Arg	His	Ile	Pro	Asp	Arg	Gly	Ala	Pro
			100					105					110		
Thr	Arg	Ala	Ser	Glu	Pro	Val	Ser	Ala	Ala	Gly	His	Cys	Pro	Glu	Trp
		115					120					125			
Thr	Val	Val	Phe	Asp	Leu	Ser	Ala	Val	Glu	Pro	Ala	Glu	Arg	Pro	Ser
		130					135					140			
Arg	Ala	Arg	Leu	Glu	Leu	Arg	Phe	Ala	Ala	Ala	Ala	Ala	Ala	Ala	Pro
145					150					155					160
Glu	Gly	Gly	Trp	Glu	Leu	Ser	Val	Ala	Gln	Ala	Gly	Gln	Gly	Ala	Gly
				165					170					175	
Ala	Asp	Pro	Gly	Pro	Val	Leu	Leu	Arg	Gln	Leu	Val	Pro	Ala	Leu	Gly
			180					185					190		
Pro	Pro	Val	Arg	Ala	Glu	Leu	Leu	Gly	Ala	Ala	Trp	Ala	Arg	Asn	Ala
		195					200					205			
Ser	Trp	Pro	Arg	Ser	Leu	Arg	Leu	Ala	Leu	Ala	Leu	Arg	Pro	Arg	Ala
	210					215					220				
Pro	Ala	Ala	Cys	Ala	Arg	Leu	Ala	Glu	Ala	Ser	Leu	Leu	Leu	Val	Thr
225					230					235					240
Leu	Asp	Pro	Arg	Leu	Cys	His	Pro	Leu	Ala	Arg	Pro	Arg	Arg	Asp	Ala
				245					250					255	
Glu	Pro	Val	Leu	Gly	Gly	Gly	Pro	Gly	Gly	Ala	Cys	Arg	Ala	Arg	Arg
			260					265					270		
Leu	Tyr	Val	Ser	Phe	Arg	Glu	Val	Gly	Trp	His	Arg	Trp	Val	Ile	Ala
		275					280						285		
Pro	Arg	Gly	Phe	Leu	Ala	Asn	Tyr	Cys	Gln	Gly	Gln	Cys	Ala	Leu	Pro
	290					295					300				
Val	Ala	Leu	Ser	Gly	Ser	Gly	Gly	Pro	Pro	Ala	Leu	Asn	His	Ala	Val
305					310					315					320
Leu	Arg	Ala	Leu	Met	His	Ala	Ala	Ala	Pro	Gly	Ala	Ala	Asp	Leu	Pro

				325					330					335			
Cys	Cys	Val	Pro	Ala	Arg	Leu	Ser	Pro	Ile	Ser	Val	Leu	Phe	Phe	Asp		
			340					345					350				
Asn	Ser	Asp	Asn	Val	Val	Leu	Arg	Gln	Tyr	Glu	Asp	Met	Val	Val	Asp		
		355					360					365					
Glu	Cys	Gly	Cys	Arg													
	370																

<210> 37  
 <211> 502  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 37

Pro	Met	Arg	Leu	Pro	Lys	Leu	Leu	Thr	Phe	Leu	Leu	Trp	Tyr	Leu	Ala		
1				5					10					15			
Trp	Leu	Asp	Leu	Glu	Phe	Ile	Cys	Thr	Val	Leu	Gly	Ala	Pro	Asp	Leu		
			20					25					30				
Gly	Gln	Arg	Pro	Gln	Gly	Ser	Arg	Pro	Gly	Leu	Ala	Lys	Ala	Glu	Ala		
		35					40					45					
Lys	Glu	Arg	Pro	Pro	Leu	Ala	Arg	Asn	Val	Phe	Arg	Pro	Gly	Gly	His		
	50					55					60						
Ser	Tyr	Gly	Gly	Gly	Ala	Thr	Asn	Ala	Asn	Ala	Arg	Ala	Lys	Gly	Gly		
65					70					75				80			
Thr	Gly	Gln	Thr	Gly	Gly	Leu	Thr	Gln	Pro	Lys	Lys	Asp	Glu	Pro	Lys		
				85					90					95			
Lys	Leu	Pro	Pro	Arg	Pro	Gly	Gly	Pro	Glu	Pro	Lys	Pro	Gly	His	Pro		
			100					105					110				
Pro	Gln	Thr	Arg	Gln	Ala	Thr	Ala	Arg	Thr	Val	Thr	Pro	Lys	Gly	Gln		
		115					120					125					
Leu	Pro	Gly	Gly	Lys	Ala	Pro	Pro	Lys	Ala	Gly	Ser	Val	Pro	Ser	Ser		
	130					135					140						
Phe	Leu	Leu	Lys	Lys	Ala	Arg	Glu	Pro	Gly	Pro	Arg	Glu	Pro	Lys			
145					150					155				160			
Glu	Pro	Phe	Arg	Pro	Pro	Pro	Ile	Thr	Pro	His	Glu	Tyr	Met	Leu	Ser		
				165					170					175			
Leu	Tyr	Arg	Thr	Leu	Ser	Asp	Ala	Asp	Arg	Lys	Gly	Gly	Asn	Ser	Ser		
			180					185					190				
Val	Lys	Leu	Glu	Ala	Gly	Leu	Ala	Asn	Thr	Ile	Thr	Ser	Phe	Ile	Asp		
		195					200					205					
Lys	Gly	Gln	Asp	Asp	Arg	Gly	Pro	Val	Val	Arg	Lys	Gln	Arg	Tyr	Val		
	210					215					220						
Phe	Asp	Ile	Ser	Ala	Leu	Glu	Lys	Asp	Gly	Leu	Leu	Gly	Ala	Glu	Leu		
225					230					235				240			
Arg	Ile	Leu	Arg	Lys	Lys	Pro	Ser	Asp	Thr	Ala	Lys	Pro	Ala	Val	Pro		
				245					250					255			
Arg	Ser	Arg	Arg	Ala	Ala	Gln	Leu	Lys	Leu	Ser	Ser	Cys	Pro	Ser	Gly		
			260					265					270				
Arg	Gln	Pro	Ala	Ala	Leu	Leu	Asp	Val	Arg	Ser	Val	Pro	Gly	Leu	Asp		
		275					280					285					
Gly	Ser	Gly	Trp	Glu	Val	Phe	Asp	Ile	Trp	Lys	Leu	Phe	Arg	Asn	Phe		
	290					295					300						
Lys	Asn	Ser	Ala	Gln	Leu	Cys	Leu	Glu	Leu	Glu	Ala	Trp	Glu	Arg	Gly		
305					310					315					320		
Arg	Thr	Val	Asp	Leu	Arg	Gly	Leu	Gly	Phe	Asp	Arg	Ala	Ala	Arg	Gln		
				325					330					335			

Val	His	Glu	Lys	Ala	Leu	Phe	Leu	Val	Phe	Gly	Arg	Thr	Lys	Lys	Arg	
			340					345					350			
Asp	Leu	Phe	Phe	Asn	Glu	Ile	Lys	Ala	Arg	Ser	Gly	Gln	Asp	Asp	Lys	
		355					360					365				
Thr	Val	Tyr	Glu	Tyr	Leu	Phe	Ser	Gln	Arg	Arg	Lys	Arg	Arg	Ala	Pro	
	370					375					380					
Ser	Ala	Thr	Arg	Gln	Gly	Lys	Arg	Pro	Ser	Lys	Asn	Leu	Lys	Ala	Arg	
385					390					395					400	
Cys	Ser	Arg	Lys	Ala	Leu	His	Val	Asn	Phe	Lys	Asp	Met	Gly	Trp	Asp	
			405					410						415		
Asp	Trp	Ile	Ile	Ala	Pro	Leu	Glu	Tyr	Glu	Ala	Phe	His	Cys	Glu	Gly	
		420					425						430			
Leu	Cys	Glu	Phe	Pro	Leu	Arg	Ser	His	Leu	Glu	Pro	Thr	Asn	His	Ala	
	435						440					445				
Val	Ile	Gln	Thr	Leu	Met	Asn	Ser	Met	Asp	Pro	Glu	Ser	Thr	Pro	Pro	
	450					455				460						
Thr	Cys	Cys	Val	Pro	Thr	Arg	Leu	Ser	Pro	Ile	Ser	Ile	Leu	Phe	Ile	
465						470				475					480	
Asp	Ser	Ala	Asn	Asn	Val	Val	Tyr	Lys	Gln	Tyr	Glu	Asp	Met	Val	Val	
			485						490					495		
Glu	Ser	Cys	Gly	Cys	Arg											
			500													

<210> 38  
 <211> 376  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 38

Pro	Met	Gln	Lys	Leu	Gln	Leu	Cys	Val	Tyr	Ile	Tyr	Leu	Phe	Met	Leu	
1			5					10					15			
Ile	Val	Ala	Gly	Pro	Val	Asp	Leu	Asn	Glu	Asn	Ser	Glu	Gln	Lys	Glu	
		20					25					30				
Asn	Val	Glu	Lys	Glu	Gly	Leu	Cys	Asn	Ala	Cys	Thr	Trp	Arg	Gln	Asn	
	35					40					45					
Thr	Lys	Ser	Ser	Arg	Ile	Glu	Ala	Ile	Lys	Ile	Gln	Ile	Leu	Ser	Lys	
	50					55					60					
Leu	Arg	Leu	Glu	Thr	Ala	Pro	Asn	Ile	Ser	Lys	Asp	Val	Ile	Arg	Gln	
65				70					75						80	
Leu	Leu	Pro	Lys	Ala	Pro	Pro	Leu	Arg	Glu	Leu	Ile	Asp	Gln	Tyr	Asp	
			85						90				95			
Val	Gln	Arg	Asp	Asp	Ser	Ser	Asp	Gly	Ser	Leu	Glu	Asp	Asp	Asp	Tyr	
		100					105					110				
His	Ala	Thr	Thr	Glu	Thr	Ile	Ile	Thr	Met	Pro	Thr	Glu	Ser	Asp	Phe	
	115						120					125				
Leu	Met	Gln	Val	Asp	Gly	Lys	Pro	Lys	Cys	Cys	Phe	Phe	Lys	Phe	Ser	
	130				135						140					
Ser	Lys	Ile	Gln	Tyr	Asn	Lys	Val	Val	Lys	Ala	Gln	Leu	Trp	Ile	Tyr	
145				150					155						160	
Leu	Arg	Pro	Val	Glu	Thr	Pro	Thr	Thr	Val	Phe	Val	Gln	Ile	Leu	Arg	
			165						170					175		
Leu	Ile	Lys	Pro	Met	Lys	Asp	Gly	Thr	Arg	Tyr	Thr	Gly	Ile	Arg	Ser	
		180					185					190				
Leu	Lys	Leu	Asp	Met	Asn	Pro	Gly	Thr	Gly	Ile	Trp	Gln	Ser	Ile	Asp	
	195						200					205				
Val	Lys	Thr	Val	Leu	Gln	Asn	Trp	Leu	Lys	Gln	Pro	Glu	Ser	Asn	Leu	

210		215		220
Gly Ile Glu Ile Lys Ala Leu Asp Glu Asn Gly His Asp Leu Ala Val				
225		230		240
Thr Phe Pro Gly Pro Gly Glu Asp Gly Leu Asn Pro Phe Leu Glu Val				
	245		250	255
Lys Val Thr Asp Thr Pro Lys Arg Ser Arg Arg Asp Phe Gly Leu Asp				
	260	265		270
Cys Asp Glu His Ser Thr Glu Ser Arg Cys Cys Arg Tyr Pro Leu Thr				
	275	280		285
Val Asp Phe Glu Ala Phe Gly Trp Asp Trp Ile Ile Ala Pro Lys Arg				
	290	295		300
Tyr Lys Ala Asn Tyr Cys Ser Gly Glu Cys Glu Phe Val Phe Leu Gln				
305		310		320
Lys Tyr Pro His Thr His Leu Val His Gln Ala Asn Pro Arg Gly Ser				
	325		330	335
Ala Gly Pro Cys Cys Thr Pro Thr Lys Met Ser Pro Ile Asn Met Leu				
	340	345		350
Tyr Phe Asn Gly Lys Glu Gln Ile Ile Tyr Gly Lys Ile Pro Ala Met				
	355	360		365
Val Val Asp Arg Cys Gly Cys Ser				
370		375		

<210> 39  
 <211> 455  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 39

Pro Met Ala Arg Pro Asn Lys Phe Leu Leu Trp Phe Cys Cys Phe Ala	
1	5 10 15
Trp Leu Cys Phe Pro Ile Ser Leu Gly Ser Gln Ala Ser Gly Gly Glu	
	20 25 30
Ala Gln Ile Ala Ala Ser Ala Glu Leu Glu Ser Gly Ala Met Pro Trp	
	35 40 45
Ser Leu Leu Gln His Ile Asp Glu Arg Asp Arg Ala Gly Leu Leu Pro	
	50 55 60
Ala Leu Phe Lys Val Leu Ser Val Gly Arg Gly Gly Ser Pro Arg Leu	
65	70 75 80
Gln Pro Asp Ser Arg Ala Leu His Tyr Met Lys Lys Leu Tyr Lys Thr	
	85 90 95
Tyr Ala Thr Lys Glu Gly Ile Pro Lys Ser Asn Arg Ser His Leu Tyr	
	100 105 110
Asn Thr Val Arg Leu Phe Thr Pro Cys Thr Arg His Lys Gln Ala Pro	
	115 120 125
Gly Asp Gln Val Thr Gly Ile Leu Pro Ser Val Glu Leu Leu Phe Asn	
	130 135 140
Leu Asp Arg Ile Thr Thr Val Glu His Leu Leu Lys Ser Val Leu Leu	
145	150 155 160
Tyr Asn Ile Asn Asn Ser Val Ser Phe Ser Ser Ala Val Lys Cys Val	
	165 170 175
Cys Asn Leu Met Ile Lys Glu Pro Lys Ser Ser Ser Arg Thr Leu Gly	
	180 185 190
Arg Ala Pro Tyr Ser Phe Thr Phe Asn Ser Gln Phe Glu Phe Gly Lys	
	195 200 205
Lys His Lys Trp Ile Gln Ile Asp Val Thr Ser Leu Leu Gln Pro Leu	
210	215 220

Val	Ala	Ser	Asn	Lys	Arg	Ser	Ile	His	Met	Ser	Ile	Asn	Phe	Thr	Cys
225					230					235					240
Met	Lys	Asp	Gln	Leu	Glu	His	Pro	Ser	Ala	Gln	Asn	Gly	Leu	Phe	Asn
				245					250						255
Met	Thr	Leu	Val	Ser	Pro	Ser	Leu	Ile	Leu	Tyr	Leu	Asn	Asp	Thr	Ser
			260					265							270
Ala	Gln	Ala	Tyr	His	Ser	Trp	Tyr	Ser	Leu	His	Tyr	Lys	Arg	Arg	Pro
			275				280						285		
Ser	Gln	Gly	Pro	Asp	Gln	Glu	Arg	Ser	Leu	Ser	Ala	Tyr	Pro	Val	Gly
	290					295					300				
Glu	Glu	Ala	Ala	Glu	Asp	Gly	Arg	Ser	Ser	His	His	Arg	His	Arg	Arg
305					310					315					320
Gly	Gln	Glu	Thr	Val	Ser	Ser	Glu	Leu	Lys	Lys	Pro	Leu	Gly	Pro	Ala
				325					330						335
Ser	Phe	Asn	Leu	Ser	Glu	Tyr	Phe	Arg	Gln	Phe	Leu	Leu	Pro	Gln	Asn
			340					345						350	
Glu	Cys	Glu	Leu	His	Asp	Phe	Arg	Leu	Ser	Phe	Ser	Gln	Leu	Lys	Trp
		355					360						365		
Asp	Asn	Trp	Ile	Val	Ala	Pro	His	Arg	Tyr	Asn	Pro	Arg	Tyr	Cys	Lys
	370					375					380				
Gly	Asp	Cys	Pro	Arg	Ala	Val	Gly	His	Arg	Tyr	Gly	Ser	Pro	Val	His
385					390					395					400
Thr	Met	Val	Gln	Asn	Ile	Ile	Tyr	Glu	Lys	Leu	Asp	Ser	Ser	Val	Pro
				405					410						415
Arg	Pro	Ser	Cys	Val	Pro	Ala	Lys	Tyr	Ser	Pro	Leu	Ser	Val	Leu	Thr
			420					425						430	
Ile	Glu	Pro	Asp	Gly	Ser	Ile	Ala	Tyr	Lys	Glu	Tyr	Glu	Asp	Met	Ile
	435						440						445		
Ala	Thr	Lys	Cys	Thr	Cys	Arg									
	450					455									

<210> 40

<211> 238

<212> PRT

<213> HOMO SAPIEN

<400> 40

Pro	Met	Pro	Gly	Leu	Ile	Ser	Ala	Arg	Gly	Gln	Pro	Leu	Leu	Glu	Val
1				5					10					15	
Leu	Pro	Pro	Gln	Ala	His	Leu	Gly	Ala	Leu	Phe	Leu	Pro	Glu	Ala	Pro
			20					25					30		
Leu	Gly	Leu	Ser	Ala	Gln	Pro	Ala	Leu	Trp	Pro	Thr	Leu	Ala	Ala	Leu
		35					40					45			
Ala	Leu	Leu	Ser	Ser	Val	Ala	Glu	Ala	Ser	Leu	Gly	Ser	Ala	Pro	Arg
	50					55					60				
Ser	Pro	Ala	Pro	Arg	Glu	Gly	Pro	Pro	Pro	Val	Leu	Ala	Ser	Pro	Ala
65					70					75					80
Gly	His	Leu	Pro	Gly	Gly	Arg	Thr	Ala	Arg	Trp	Cys	Ser	Gly	Arg	Ala
				85					90					95	
Arg	Arg	Pro	Pro	Pro	Gln	Pro	Ser	Arg	Pro	Ala	Pro	Pro	Pro	Pro	Ala
			100					105						110	
Pro	Pro	Ser	Ala	Leu	Pro	Arg	Gly	Gly	Arg	Ala	Ala	Arg	Ala	Gly	Gly
			115				120					125			
Pro	Gly	Ser	Arg	Ala	Arg	Ala	Ala	Gly	Ala	Arg	Gly	Cys	Arg	Leu	Arg
	130					135					140				
Ser	Gln	Leu	Val	Pro	Val	Arg	Ala	Leu	Gly	Leu	Gly	His	Arg	Ser	Asp

145					150					155				160	
Glu	Leu	Val	Arg	Phe	Arg	Phe	Cys	Ser	Gly	Ser	Cys	Arg	Arg	Ala	Arg
				165					170					175	
Ser	Pro	His	Asp	Leu	Ser	Leu	Ala	Ser	Leu	Leu	Gly	Ala	Gly	Ala	Leu
			180					185					190		
Arg	Pro	Pro	Pro	Gly	Ser	Arg	Pro	Val	Ser	Gln	Pro	Cys	Cys	Arg	Pro
			195				200					205			
Thr	Arg	Tyr	Glu	Ala	Val	Ser	Phe	Met	Asp	Val	Asn	Ser	Thr	Trp	Arg
	210					215					220				
Thr	Val	Asp	Arg	Leu	Ser	Ala	Thr	Ala	Cys	Gly	Cys	Leu	Gly		
225					230					235					

<210> 41  
 <211> 157  
 <212> PRT  
 <213> HOMO SAPIEN

<400> 41

Pro	Met	Ala	Val	Gly	Lys	Phe	Leu	Leu	Gly	Ser	Leu	Leu	Leu	Leu	Ser
1				5					10					15	
Leu	Gln	Leu	Gly	Gln	Gly	Trp	Gly	Pro	Asp	Ala	Arg	Gly	Val	Pro	Val
			20				25						30		
Ala	Asp	Gly	Glu	Phe	Ser	Ser	Glu	Gln	Val	Ala	Lys	Ala	Gly	Gly	Thr
		35				40					45				
Trp	Leu	Gly	Thr	His	Arg	Pro	Leu	Ala	Arg	Leu	Arg	Arg	Ala	Leu	Ser
	50					55					60				
Gly	Pro	Cys	Gln	Leu	Trp	Ser	Leu	Thr	Leu	Ser	Val	Ala	Glu	Leu	Gly
65					70					75				80	
Leu	Gly	Tyr	Ala	Ser	Glu	Glu	Lys	Val	Ile	Phe	Arg	Tyr	Cys	Ala	Gly
				85				90					95		
Ser	Cys	Pro	Arg	Gly	Ala	Arg	Thr	Gln	His	Gly	Leu	Ala	Leu	Ala	Arg
			100					105					110		
Leu	Gln	Gly	Gln	Gly	Arg	Ala	His	Gly	Gly	Pro	Cys	Cys	Arg	Pro	Thr
		115				120						125			
Arg	Tyr	Thr	Asp	Val	Ala	Phe	Leu	Asp	Asp	Arg	His	Arg	Trp	Gln	Arg
	130					135					140				
Leu	Pro	Gln	Leu	Ser	Ala	Ala	Ala	Cys	Gly	Cys	Gly	Gly			
145					150					155					